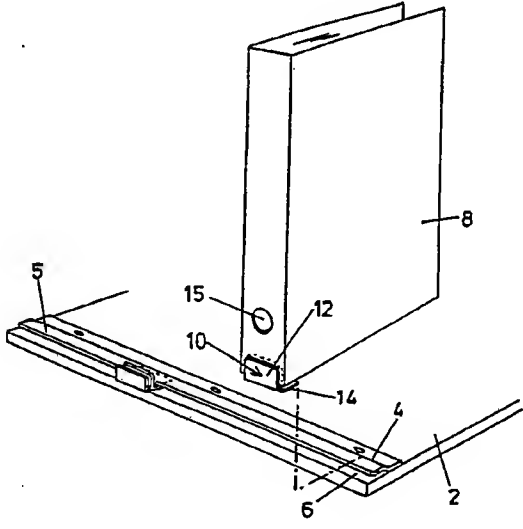


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## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>5</sup> :</b> <b>B42D 17/00, A47B 65/00</b>	<b>A1</b>	<b>(11) International Publication Number:</b> <b>WO 93/07007</b> <b>(43) International Publication Date:</b> 15 April 1993 (15.04.93)
<b>(21) International Application Number:</b> PCT/DK92/00293 <b>(22) International Filing Date:</b> 2 October 1992 (02.10.92)  <b>(30) Priority data:</b> 1702/91 4 October 1991 (04.10.91) DK  <b>(71)(72) Applicant and Inventor:</b> LARSEN, Palle, John [DK/DK]; Sanatorievej 12 D, DK-8680 Ry (DK).  <b>(74) Agent:</b> K. SKØTT-JENSEN PATENTINGENIØRER A/S; Lemmingvej 225, DK-8361 Hasselager (DK).  <b>(81) Designated States:</b> AT, AU, BB, BG, BR, CA, CH, CS, DE, DK, ES, FI, GB, HU, JP, KP, KR, LK, LU, MG, MN, MW, NL, NO, PL, RO, RU, SD, SE, US, European patent (AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, SN, TD, TG).		<b>Published</b> <i>With international search report.</i> <i>In English translation (filed in Danish).</i>
<b>(54) Title:</b> A SYSTEM FOR LATERAL SUPPORT OF STANDING BOOK MEMBER, PARTICULARLY PAPER BINDERS, AND A BOOK MEMBER AND A SUPPORT MEMBER THEREFOR    <b>(57) Abstract</b>  The invention concerns the well-known problem that books and particularly hoop paper binders on a shelf are liable to tilt over, if they are not effectively supported at the sides. According to the invention this problem may be overcome in a simple manner in that the book members, at their lower back area, are provided with an angle plate (10) having a flange portion (14), which projects freely forwardly along a rear lower edge area of the book member, whereby, when the book member is placed on the shelf (2) the flange portion (14) can be inserted into holding engagement with a forwardly open holding groove (6) of the shelf or underneath the front edge of the shelf.		

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A system for lateral support of standing book member, particularly paper binders, and a book member and a support member therefor.

The present invention relates to a system for lateral support of standing book members, particularly paper binders, on shelves or other support surfaces. It has always been normal that books are supported in an upright position on a shelf or a corresponding carrier surface by means of appropriate lateral support in the shape of other book members or special lateral end members, which occupy individual space on the bookshelf and merely function as inserted separator plate members on the shelf. It would be desirable that each book member could be placed in a stabilized manner with no use of lateral support, and especially desirable in connection with half-empty hoop paper binders, which tend to fall in an unordered manner if they are not provided with immediate lateral support.

A few proposals are known, by which books may be placed in such a manner as to provide a stable positioning of the books, almost as a side effect. It is thus indicated in US-A-1,277,544 that a fixed hinge pipe is placed in front of the front edge of the shelf and serves for rotatable reception of a lower, bent end portion of an upwardly protruding plate member, the width of which corresponds to or is slightly larger than the width of the back of an associated book. The plate member projects upwardly along a certain portion of the back of the book and is provided at its opposite sides with inwardly projecting plate webs, between which the lower portion of the back of the book is received. The book is released for removal by downward rotation of the plate member about the hinge rod, and the aim in connection with this system is that in libraries, by marking the book title on the outwardly oriented face of the plate member, the concerned space is automatically reserved for the concerned book, thus providing added security of correct repositioning of the

book. When the plate member is rotated back into place after insertion of the book, there will furthermore be provided a lateral stabilization of the book, but for a more general use, this system is irrelevant.

In US-A-3,635,351 a bookshelf is indicated, in front of which is coupled a reading desk, in which the books are placed upside down, being connected at the lower end of their backs to a rotatable fitting flush with the reading desk, such that the books may be rotated forwards individually for positioning on the desk. When the book is opened in this position it will assume a correct reading position, the top of the book still positioned at the rotatable fitting about or onto which the book has been rotated. The holding engagement between each fitting and the associated book is achieved by means of an upright plate tongue, which has been guided into the cavity behind the back of the book, and it must be recognized that hereby a lateral stabilization of the individual books inserted on the shelf will be obtained as an additional effect. However, not this system either will be reasonably usable in connection with more ordinary book and binder archives, where the bodies should preferably be easy to remove and just as easy to reinsert at any emplacement.

The aim of the invention, which on this background refers to a system as indicated in the introductory clause of claim 1, is to indicate a system, which provides for the lateral stability of the book members, but otherwise does not in any manner limit the usability of the archive. According to the invention this is obtained by the system being arranged in the manner indicated in the characterizing clause of claim 1. The holder members indicated therein may appear as more or less integrated portions of the book members, and by insertion of the book member anywhere on the shelf, the flange portion of the holder member may be inserted under the top side of the holding groove on the shelf, whereby the member after free insertion will be prevented from lateral tipping. This

effect will be obtained by a relatively modest width of the horizontal flange portion, whereby the width hereof will not be determined by the width of the book member, i.e. for book members of different widths, holder members of one and the same, smaller width, may very well be used such that it is still the book members themselves which determinate the effective book width.

The holder members may be placed in a more or less fixed connection with the lower back portions of the book members. If they are fixed by clamping, it may be appropriate that they are as wide as their associated flange portions for engagement with the said holding groove, but if they are permanently attached to the book members, e.g. riveted onto the back of each book member, they may of course be considerably narrower.

The holding groove on the shelf or the carrying surface may be constituted by a groove which is provided either on the top side of the carrying surface, by mounting of a profiled rib, one side edge of which will be free at a certain distance above the carrying surface, or by providing a holding groove in the front edge side of the carrying shelf; as an extreme the 'holding groove' may be constituted by the bottom-edge area of the front edge of the shelf, inasfar as the engager portions of the holding members may be arranged specifically for gripping the front edge area of a conventionally embodied shelf. The invention will also comprise both book members which are embodied in integration with the special holding flange, e.g. for engagement above the front edge area of quite ordinary book shelves, and such support members or fittings which are placeable on ordinary book members for making possible their use in the disclosed system, also for stabilizing the book members in connection with conventionally embodied book shelves.

The invention is explained in more detail in the following, in which

Fig. 1 is a perspective view of a system according to

the invention.

Fig. 2 is a sectional view for illustrating another embodiment thereof.

Fig. 3 is a perspective view of a modified embodiment of a shelf, and

Fig. 4 is a corresponding view of a detached shelf element.

In Fig. 1 is shown a shelf 2, along the front edge of which is mounted a profiled rib 4 with a forwardly facing raised edge portion 5 for forming a horizontal groove 6 at the top side of the shelf 2. On associated hoop paper binders 8, at their lower back edge, is placed a holder portion 10 which grips and clamps the back of the binder by means of an upright gripping portion 12, and which has a lower backwardly extending plate portion 14, which by means of a brief forward sliding of the binder being inserted on the shelf 2 may be guided into engagement with the groove 6. This engagement will ensure that the binder 8 does not tip over on the surface 2, regardless of whether it is left without any support whatsoever to either side.

The essential is that the book or the binder may be provided with a gripping portion 10, which at an area anywhere along the carrying part 2 may be brought individually into a laterally supporting engagement with a fixed profiled portion which is longitudinal relative the carrying surface and, as an extreme, may even be constituted simply by the longitudinal edge area of the carrying surface or by a groove in the front edge surface thereof. This is shown in more detail in Fig. 2, where a holder portion 16 is placed at the lower end of the back of the book or the binder and engages a groove 18 in the front edge of the carrying surface 2 in a laterally supporting manner. Alternatively the holding engagement may be established with the lower edge of the shelf, by means of a flange portion 20 shown in dotted lines which engages below the front edge area of the shelf. The system may be arranged such that by the insertion of the flange 14, there

also occurs a certain clamping with the holding engagement, such that a moderate pull must be exerted on the book member for removing this; hereby neighbouring book members will be better prevented from random, unintentional "co-removal". It is common that binders are provided with a lower gripping aperture 15 near the lower edge of the back, and in connection with the invention it will be a good possibility that this aperture may be used for reception of such a protruding element, which may engage a fixed profiled element on the carrying surface in the manner indicated. This element or fitting may cooperate with the edge of the aperture 15 in such a manner that the aperture is still useable for gripping. The angle plate 10 may be fastened on the book or binder member in any appropriate manner, e.g. by clamping of opposite clamp members 12 on the back of a binder 8 or by a more permanent fastening thereto, e.g. by riveting. It will be appreciated that the fitting need not be as wide as the book member in order to cause an efficient lateral support of this member.

With regard to paper binders, it is common that the hoop mechanism thereof is constructed on a metal plate which is fastened on the area near the back of the rear cover of the binder, and it will be relatively simple to provide this plate member with a downwardly projecting extension, which at the bottom is bent for forming the holding flange 14 as an integrated element.

Theoretically it will be a relevant possibility that the discussed holding engagement is established by a brief backwards sliding of the inserted book member after its insertion onto the shelf, i.e. with the groove 6 facing outwards, but this will require special attention by the insertion, wherefore this possibility is not especially attractive.

Fig. 3 suggests that a shelf for use in the system may be constituted by a wholly conventional shelf 22, by the upper front edge area of which is fastened a rigid or semi-rigid material rib or strip 24 which is slightly protruding

from the edge of the shelf. The holding flanges 14, which optionally also may be made of bent wire, need then merely cooperate with the outwardly projecting rib edge, i.e. the angle plate fitting may be embodied with a minimized height and yet cooperate with shelves of any thickness. The rib 22 may optionally be fastened by glueing, and alternatively it may be embodied as an angle rib, which is fastened against the front edge surface of the shelf.

In Fig. 4 is shown a shelf element 26 which is intended for being placed on a table top or even on another shelf. As indicated the element has a protruding, thin edge portion 28, whereby it will be useable similarly to the shelf according to Fig. 3. The length of the element may be adapted for receiving a certain number of binders of standard width, e.g. only 3-5 binders, which may thereby be placed e.g. on a table without any type of lateral support. However, this does not exclude the element being provided with upright end gables.



## C L A I M S

1. A system for lateral support of book members, especially hoop paper binders, on book shelves or other carrier surfaces, comprising holder members for mounting on the book members at the lower edge area thereof, and provided with protruding engagement portions for releasable engagement with longitudinal profiled members on the shelves or carrying surfaces, characterized in that the engagement portions of the holder members are constituted by substantially horizontal flange portions, which, in connection with the movement of insertion of a book member, are arranged for being guided into a holding groove extending in the longitudinal direction of the shelf or generally in the corresponding direction of the carrying surface.

2. A system according to claim 1, characterized in that the holding groove is provided by means of a profiled rib fastened to the top side of the shelf or carrying surface and at one longitudinal edge having a horizontal flange portion, which for forming the holding groove is slightly raised above the said top surface.

3. A system according to claim 1, characterized in that the holding groove is formed as a front edge groove in the carrying shelf.

4. A system according to claim 1, characterized in that the holding groove is constituted by the free space under the front edge area of the shelf, the holder members being provided with the engagement flanges positioned at a distance underneath the lower edges of the book members corresponding to the thickness of the front edge area of the shelf.

5. A system according to claim 1, characterized in that the holder members are provided with gripping portions for clamp-wise fastening of the outer shelf and back cover of the book members.

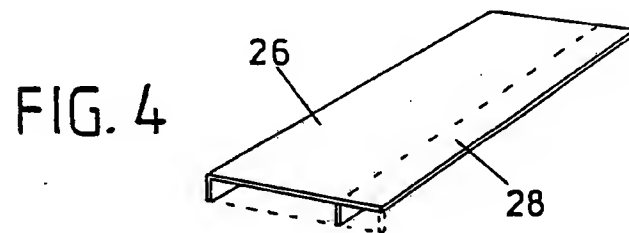
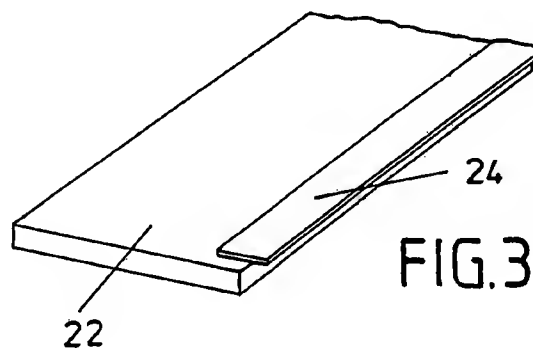
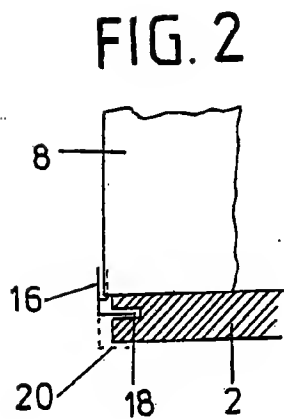
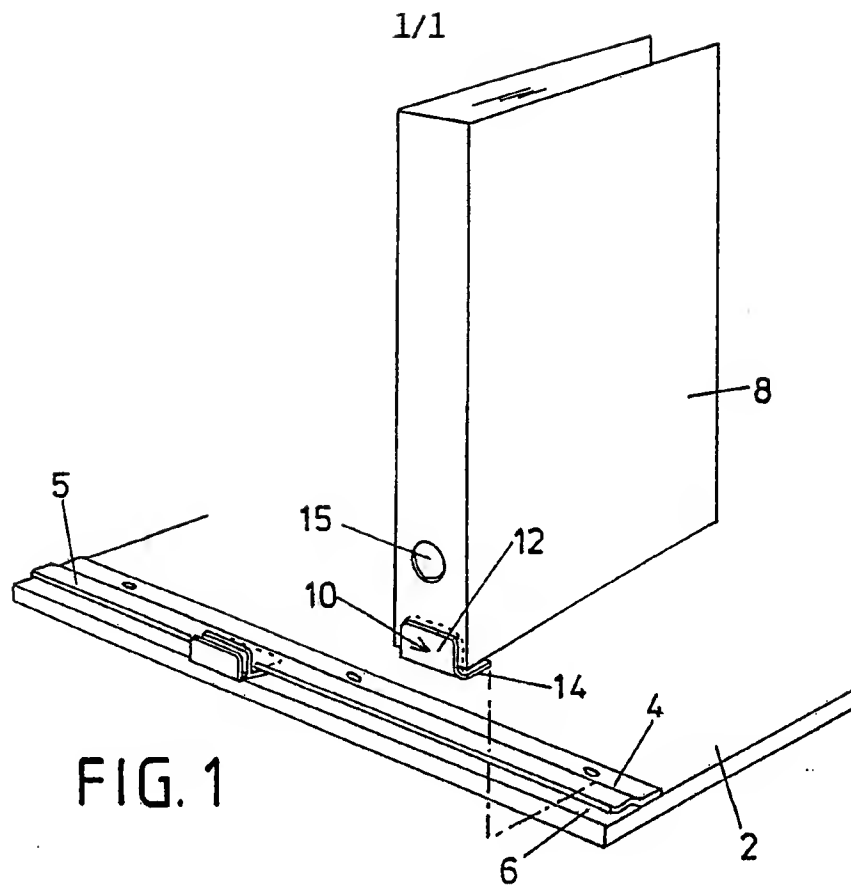
6. A system according to claim 1, characterized in that the holder members are provided with upright clamp portions for fastening on to the lower, plane back area of a paper binder.

7. A system according to claim 1, characterized in that the flange portions are further adapted for engagement with the holding groove by a light clamping engagement.

8. A book member, especially a hoop paper binder, for use in a system according to claim 1, characterized in that the book member is embodied in integration with the said flange portion.

9. A book member according to claim 8, characterized in that the flange portion projects inwards under the lower back portion of the member at a distance which corresponds to the thickness of a standard shelf.

10. A support member for placing on a book member for use in a system according to claim 1, characterized in that it is constituted by a holder member with coupling portions for fastening on a book member and with an engagement flange for cooperation with a subjacent receiving groove on or in a shelf, or for engagement below the front edge area of a shelf, respectively.



# INTERNATIONAL SEARCH REPORT

International Application No PCT/DK 92/00293

<b>I. CLASSIFICATION OF SUBJECT MATTER</b> (If several classification symbols apply, indicate all) <sup>6</sup> According to International Patent Classification (IPC) or to both National Classification and IPC <b>IPC5: B42D 17/00, A47B 65/00</b>														
<b>II. FIELDS SEARCHED</b> <div style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;">Minimum Documentation Searched<sup>7</sup></div> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 30%; border-bottom: 1px solid black;">Classification System</th> <th style="border-bottom: 1px solid black;">Classification Symbols</th> </tr> <tr> <td style="padding: 5px; vertical-align: top;"><b>IPC5</b></td> <td style="padding: 5px; vertical-align: top;"><b>B42D; B42F; A47B</b></td> </tr> </table> <div style="text-align: center; border-top: 1px solid black; border-bottom: 1px solid black;">Documentation Searched other than Minimum Documentation to the extent that such Documents are included in Fields Searched<sup>8</sup></div> <p style="padding: 5px;"><b>SE,DK,FI,NO</b> classes as above</p>			Classification System	Classification Symbols	<b>IPC5</b>	<b>B42D; B42F; A47B</b>								
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<b>III. DOCUMENTS CONSIDERED TO BE RELEVANT<sup>9</sup></b> <table style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 10%; border-bottom: 1px solid black;">Category<sup>*</sup></th> <th style="border-bottom: 1px solid black;">Citation of Document,<sup>11</sup> with indication, where appropriate, of the relevant passages<sup>12</sup></th> <th style="width: 10%; border-bottom: 1px solid black;">Relevant to Claim No.<sup>13</sup></th> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">A</td> <td style="padding: 5px;">DE, C2, 3212973 (EINKAUFSZENTRALE FÜR ÖFFENTLICHE BIBLIOTHEKEN GMBH) 5 December 1985, see figure 3 --</td> <td rowspan="4" style="vertical-align: top;"></td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">A</td> <td style="padding: 5px;">US, A, 3921811 (J.R. DAMERON) 25 November 1975, see figures 1,2 --</td> </tr> <tr> <td style="text-align: center; vertical-align: top; padding: 5px;">A</td> <td style="padding: 5px;">CH, C, 138614 (R. OHEIM) 16 May 1930, see the whole document -- -----</td> </tr> <tr> <td colspan="2" style="height: 100px;"></td> </tr> </table>			Category <sup>*</sup>	Citation of Document, <sup>11</sup> with indication, where appropriate, of the relevant passages <sup>12</sup>	Relevant to Claim No. <sup>13</sup>	A	DE, C2, 3212973 (EINKAUFSZENTRALE FÜR ÖFFENTLICHE BIBLIOTHEKEN GMBH) 5 December 1985, see figure 3 --		A	US, A, 3921811 (J.R. DAMERON) 25 November 1975, see figures 1,2 --	A	CH, C, 138614 (R. OHEIM) 16 May 1930, see the whole document -- -----		
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<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><b>* Special categories of cited documents:<sup>10</sup></b></p> <p>"A" document defining the general state of the art which is not considered to be of particular relevance</p> <p>"E" earlier document but published on or after the international filing date</p> <p>"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (see specified)</p> <p>"O" document referring to an oral disclosure, use, exhibition or other means</p> <p>"P" document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>"X" document of particular relevance, the claimed invention cannot be considered novel or cannot be considered to involve an inventive step</p> <p>"Y" document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>"&amp;" document member of the same patent family</p> </div> </div>														
<b>IV. CERTIFICATION</b> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; border-bottom: 1px solid black; padding: 5px;">           Date of the Actual Completion of the International Search  <b>29th December 1992</b> </td> <td style="width: 50%; border-bottom: 1px solid black; padding: 5px;">           Date of Mailing of this International Search Report  <div style="text-align: center; font-size: 1.2em;"><b>12 -01- 1993</b></div> </td> </tr> <tr> <td style="border-bottom: 1px solid black; padding: 5px;">           International Searching Authority  <div style="text-align: center; font-weight: bold; margin-top: 10px;">SWEDISH PATENT OFFICE</div> </td> <td style="border-bottom: 1px solid black; padding: 5px;">           Signature of Authorized Officer  <div style="text-align: center; font-weight: bold; margin-top: 10px;">Hans Hagström</div> </td> </tr> </table>			Date of the Actual Completion of the International Search <b>29th December 1992</b>	Date of Mailing of this International Search Report <div style="text-align: center; font-size: 1.2em;"><b>12 -01- 1993</b></div>	International Searching Authority <div style="text-align: center; font-weight: bold; margin-top: 10px;">SWEDISH PATENT OFFICE</div>	Signature of Authorized Officer <div style="text-align: center; font-weight: bold; margin-top: 10px;">Hans Hagström</div>								
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**ANNEX TO THE INTERNATIONAL SEARCH REPORT  
ON INTERNATIONAL PATENT APPLICATION NO.PCT/DK 92/00293**

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the Swedish Patent Office EDP file on 02/12/92. The Swedish Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE-C2- 3212973	85-12-05	NONE	
US-A- 3921811	75-11-25	NONE	
CH-C- 138614	30-05-16	NONE	